Instructions-Parts

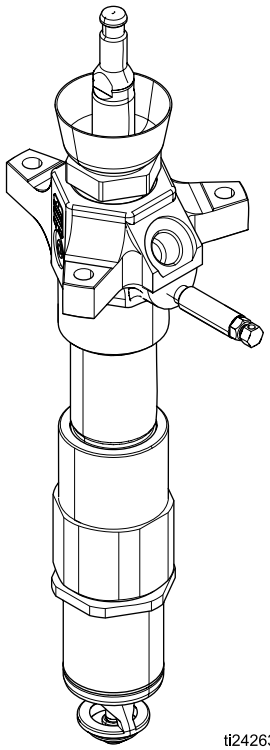
Check-Mate® 800 Displacement Pump

334127A
EN

For use with hot-melt applications. For professional use only.

Important Safety Instructions
Read all warnings and instructions in this manual and in related system manuals. Save these instructions.

Maximum Operating Temperature 400°F (204 °C)
Maximum Fluid Working Pressure 5850 psi (40 MPa, 403 bar)



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PROVEN QUALITY. LEADING TECHNOLOGY.

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Models

Part	Drum Size	Seal material
24W152	5 Gallon (20 Liter)	Carbon Filled PTFE
24W153	5 Gallon (20 Liter)	Glass Filled PTFE
24W150	55 Gallon (200 Liter)	Carbon Filled PTFE
24W151	55 Gallon (200 Liter)	Glass Filled PTFE

Related Manuals

Manuals are available at www.graco.com

Component manuals in English:

334128	Throat Seal Repair Kit, Instructions-Parts
334131	Bulldog® and Senator® Air Motor Tie Rod Kit, Instructions-Parts
334132	NXT® Air Motor Tie Rod Kit, Instructions-Parts

Warnings

The following warnings are for the setup, use, grounding, maintenance, and repair of this equipment. The exclamation point symbol alerts you to a general warning and the hazard symbols refer to procedure-specific risks. When these symbols appear in the body of this manual or on warning labels, refer back to these Warnings. Product-specific hazard symbols and warnings not covered in this section may appear throughout the body of this manual where applicable.

WARNING

SKIN INJECTION HAZARD

High-pressure fluid from dispensing device, hose leaks, or ruptured components will pierce skin. This may look like just a cut, but it is a serious injury that can result in amputation. **Get immediate surgical treatment.**

- Do not point dispensing device at anyone or at any part of the body.
- Do not put your hand over the fluid outlet.
- Do not stop or deflect leaks with your hand, body, glove, or rag.
- Follow the **Pressure Relief Procedure** when you stop dispensing and before cleaning, checking, or servicing equipment.
- Tighten all fluid connections before operating the equipment.
- Check hoses and couplings daily. Replace worn or damaged parts immediately.

MOVING PARTS HAZARD

Moving parts can pinch, cut or amputate fingers and other body parts.

- Keep clear of moving parts.
- Do not operate equipment with protective guards or covers removed.
- Pressurized equipment can start without warning. Before checking, moving, or servicing equipment, follow the **Pressure Relief Procedure** and disconnect all power sources.

WARNING

FIRE AND EXPLOSION HAZARD

Flammable fumes, such as solvent and paint fumes, in **work area** can ignite or explode. To help prevent fire and explosion:

- Use equipment only in well ventilated area.
- Eliminate all ignition sources; such as pilot lights, cigarettes, portable electric lamps, and plastic drop cloths (potential static arc).
- Keep work area free of debris, including solvent, rags and gasoline.
- Do not plug or unplug power cords, or turn power or light switches on or off when flammable fumes are present.
- Ground all equipment in the work area. See **Grounding** instructions.
- Use only grounded hoses.
- Hold gun firmly to side of grounded pail when triggering into pail. Do not use pail liners unless they are antistatic or conductive.
- **Stop operation immediately** if static sparking occurs or you feel a shock. Do not use equipment until you identify and correct the problem.
- Keep a working fire extinguisher in the work area.

BURN HAZARD

Equipment surfaces and fluid that is heated can become very hot during operation. To avoid severe burns:

- Do not touch hot fluid or equipment.

EQUIPMENT MISUSE HAZARD

Misuse can cause death or serious injury.

- Do not operate the unit when fatigued or under the influence of drugs or alcohol.
- Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. See **Technical Data** in all equipment manuals.
- Use fluids and solvents that are compatible with equipment wetted parts. See Technical Data in all equipment manuals. Read fluid and solvent manufacturer's warnings. For complete information about your material, request MSDS from distributor or retailer.
- Do not leave the work area while equipment is energized or under pressure.
- Turn off all equipment and follow the **Pressure Relief Procedure** when equipment is not in use.
- Check equipment daily. Repair or replace worn or damaged parts immediately with genuine manufacturer's replacement parts only.
- Do not alter or modify equipment. Alterations or modifications may void agency approvals and create safety hazards.
- Make sure all equipment is rated and approved for the environment in which you are using it.
- Use equipment only for its intended purpose. Call your distributor for information.
- Route hoses and cables away from traffic areas, sharp edges, moving parts, and hot surfaces.
- Do not kink or over bend hoses or use hoses to pull equipment.
- Keep children and animals away from work area.
- Comply with all applicable safety regulations.

WARNING

TOXIC FLUID OR FUMES HAZARD

Toxic fluids or fumes can cause serious injury or death if splashed in the eyes or on skin, inhaled, or swallowed.

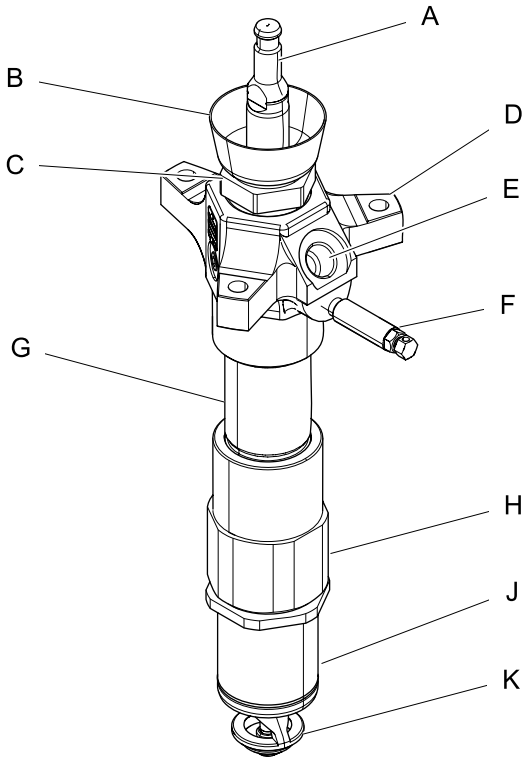
- Read MSDSs to know the specific hazards of the fluids you are using.
- Store hazardous fluid in approved containers, and dispose of it according to applicable guidelines.

PERSONAL PROTECTIVE EQUIPMENT

Wear appropriate protective equipment when in the work area to help prevent serious injury, including eye injury, hearing loss, inhalation of toxic fumes, and burns. This protective equipment includes but is not limited to:

- Protective eyewear, and hearing protection.
- Respirators, protective clothing, and gloves as recommended by the fluid and solvent manufacturer.

Component Identification

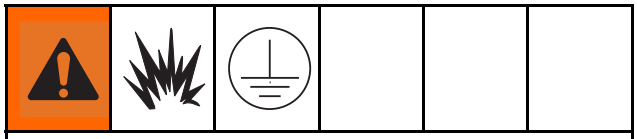


Key:

A	Displacement Pump
B	Wetcup
C	Throat Packing
D	Outlet Housing
E	Fluid Outlet
F	Bleed Valve
G	Cylinder
H	Intake Housing
J	Intake Cylinder
K	Priming Piston

Installation

Grounding



The equipment must be grounded to reduce the risk of static sparking. Static sparking can cause fumes to ignite or explode. Grounding provides an escape wire for the electric current.

Pump: the pump is grounded with a wire connecting the pump from the control enclosure. Locate the small hole (W) in the pump outlet housing. Attach the ground wire (Y) to the pump outlet housing using the ground screw (X) supplied with your system. Tighten the ground screw securely. Do not operate the equipment without the ground wire in place.

Air compressor: follow manufacturer's recommendations.

Fluid supply container: follow your local code.

Object being dispensed to: follow your local code.

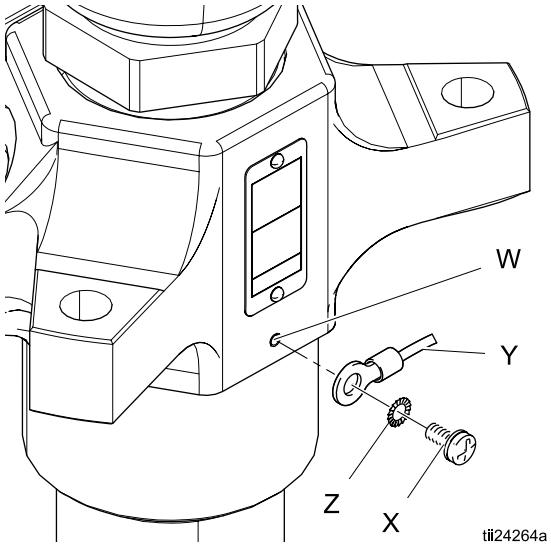


Figure 1 Grounding Screw

Connect to a Graco Air Motor

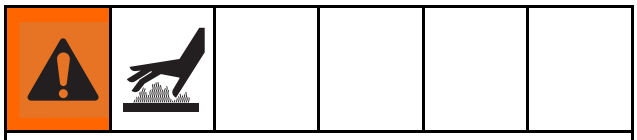
The displacement pump may be installed on Senator, Bulldog, King, and NXT Graco air motors using Tie Rod Kits. See kit manual for installation instructions.

Manual	Tie Rod Kit	Air Motor
334131	24V752	Bulldog Senator King
334132	24V754	NXT

Pressure Relief Procedure

Follow the Pressure Relief Procedure whenever you see this symbol.

This equipment stays pressurized until pressure is manually relieved. To help prevent serious injury from pressurized fluid, such as skin injection, splashing fluid and moving parts, follow the Pressure Relief Procedure when you stop spraying and before cleaning, checking, or servicing equipment.



Heated fluid can cause severe burns and can cause equipment surfaces to become very hot. Wear protective gloves and clothing when operating this equipment in a heated system. Allow the equipment to cool thoroughly before servicing.

1. Lock the gun/valve trigger safety.
2. Close all air bleed valves (required in your system) to shut off the air supply to the pump.
3. Unlock the gun/valve trigger safety.
4. Hold a metal part of the gun/valve firmly to the side of a grounded metal pail, and trigger the gun/valve to relieve pressure.
5. Lock the gun/valve trigger safety.
6. Open the pump bleeder valve (required in your system), having a container ready to catch the drainage.
7. Leave the pump bleeder valve open until you are ready to spray/dispense again.

If you suspect that the spray tip/nozzle or hose is completely clogged, or that pressure has not been fully relieved after following the steps above, very slowly loosen the tip retaining nut or hose end coupling and relieve pressure gradually, then loosen completely. Now clear the tip/nozzle or hose.

Pump Startup, Adjustment, and Shutdown Instructions

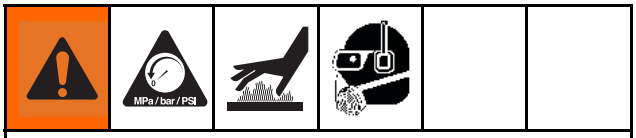
See your separate system manual instructions.

Repair

Required Tools

- Torque wrench
- Bench vise, with soft jaws
- Rubber mallet
- Hammer
- O-ring pick
- 13 mm (1/2 in.) dia. brass rod
- Set of socket wrenches
- Set of adjustable wrenches
- Pipe wrench
- Screwdriver
- Heat gun
- Gloves
- Thread lubricant
- Thread sealant

Disconnect the Pump



Heated fluid can cause severe burns and can cause equipment surfaces to become very hot. Wear protective gloves and clothing when operating this equipment in a heated system. Allow the equipment to cool thoroughly before servicing.

Note

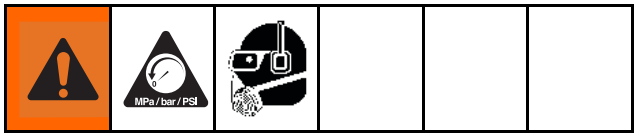
The priming piston can be serviced without disconnecting the displacement pump from the motor. see Replace Priming Piston, page 11.

1. Flush the pump, if possible. Stop the pump at the bottom of its stroke, to prevent fluid from drying on the exposed displacement rod.
2. Relieve the pressure. See Pressure Relief Procedure, page 8 .
3. Allow the pump to cool if being used in a heated system.

   Note

   It may be necessary to use a heat gun to ease disassembly of some parts.
4. Disconnect the air and fluid hoses.
5. Disconnect the pump from the heated platen.
6. Disconnect the displacement pump from the motor as explained in your separate system manual.

Replace Throat Packings



Note

The throat packings are available as a preassembled kit.

Pump Part No.	Throat Seal Repair Kit
24W152	24V752
24W153	24V753
24W150	24V752
24W151	24V753

1. Relieve the pressure. See Pressure Relief Procedure, page 8 .
2. See Fig. 2. Unscrew the packing nut (2) using a pipe wrench. Remove the o-ring (27) and washer (26) from the bottom of the packing housing (25) or from the outlet housing (3).
3. Place the flats of the packing nut (2) in a vise. Unscrew the packing housing (25) and discard it and the packings. Remove the washer (24), seal (23), and backup washer (22) from the packing nut.
4. The throat repair kit is preassembled. Screw the kit into the packing nut (2), making sure that the backup washer (22), seal (23), and washer (24) are properly positioned on top of the packing housing (25), with the lips of the seal facing down. Torque the packing housing (25) to 225 ±10 ft-lb (305 ± 14 N•m).
5. Before installing packing housing into pump, generously lubricate seals with high temperature grease supplied with repair kit.
6. If necessary, use an arbor press to install o-ring (27) in packing housing (25).
7. Screw the packing nut (2) and packing housing (25) into the outlet housing (3). Torque to 150 ± 30 ft-lb (203 ± 41 N•m).

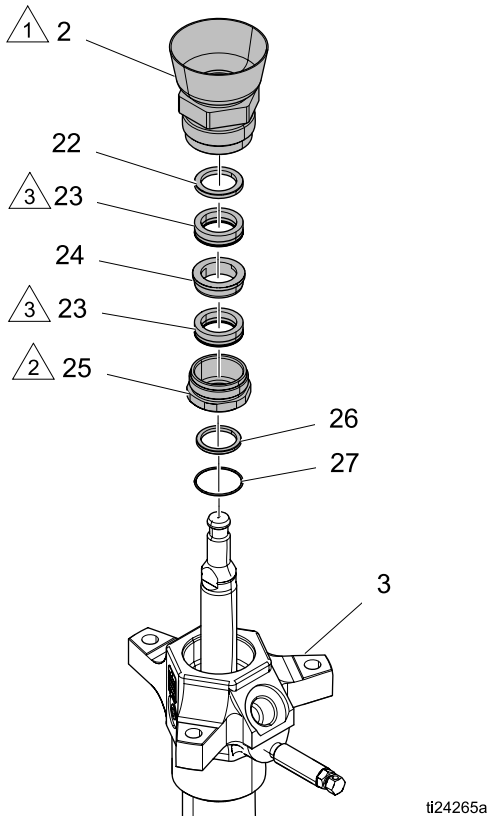


Figure 2 Throat Packings

1	Torque to 225 ± 10 ft-lb (305 ± 14 N•m).
2	Torque to 150 ± 30 ft-lb (203 ± 41 N•m).
3	Lips of u-cup packing must face down.

Replace Priming Piston

Pump Part No.	Repair Kit
24W152	237910
24W153	237910
24W150	237909
24W151	237909

1. Stop the pump on the downstroke, with the flats of the priming piston rod (17) exposed below the intake cylinder (18). It is not necessary to disconnect the displacement pump from the motor, but you may have to disconnect it from the heated platen.
2. Relieve the pressure. See Pressure Relief Procedure, page 8.
3. Hold the flats of the priming piston rod (17) with an adjustable wrench, and use a second wrench to unscrew the priming piston seat (21) from the rod. Slide the priming piston (20) off the rod. Inspect the inner and outer surfaces of the piston (20) for scoring, wear, or other damage.
4. Slide the priming piston (20) onto the rod (17) until it stops. Hold the rod (17) steady with a wrench on the flats, and screw the seat (21) onto the rod with another wrench. Torque to 60 ± 3 ft-lb (81 ± 4 N•m).

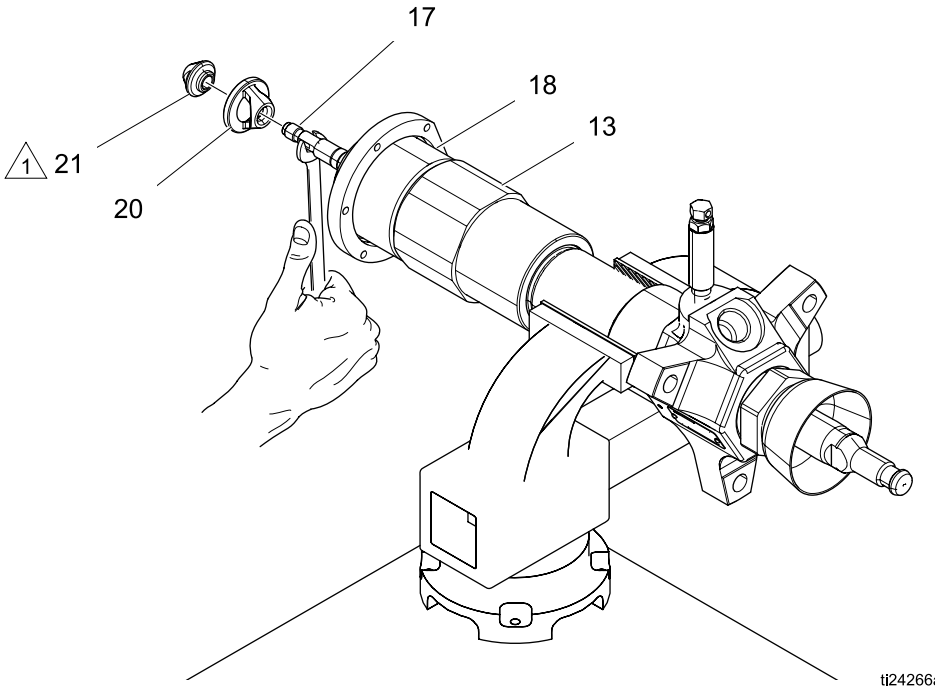
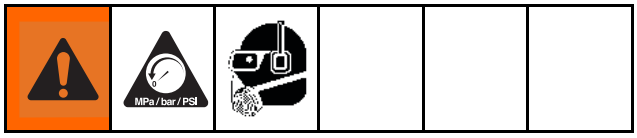


Figure 3 Priming Piston

1	Torque to 60 ± 3 ft-lb (81 ± 4 N•m).
2	Torque to 390 ± 45 ft-lb (529 ± 61 N•m).
3	Torque to 150 ± 30 ft-lb (203 ± 41 N•m).

Replace Intake Valve



Note

The intake valve (V) is available as a preassembled, pre–lubricated kit. The kit includes the valve and all seals and packings, and also includes the intake valve seat (15) and seal (16). See Fig. 5.

Pump Part No.	Repair Kit
24W152	253546
24W153	237907
24W150	253546
24W151	237907

1. Relieve the pressure. See Pressure Relief Procedure, page 8 .
2. Disconnect the displacement pump. See system manual for instructions.
3. Place the pump in a vise, with the outlet housing (3) positioned as shown.
4. Remove priming piston (20). See Replace Priming Piston, page 11.
5. Using a pipe wrench on the hex of the intake cylinder (18), unscrew it from the intake housing (13).

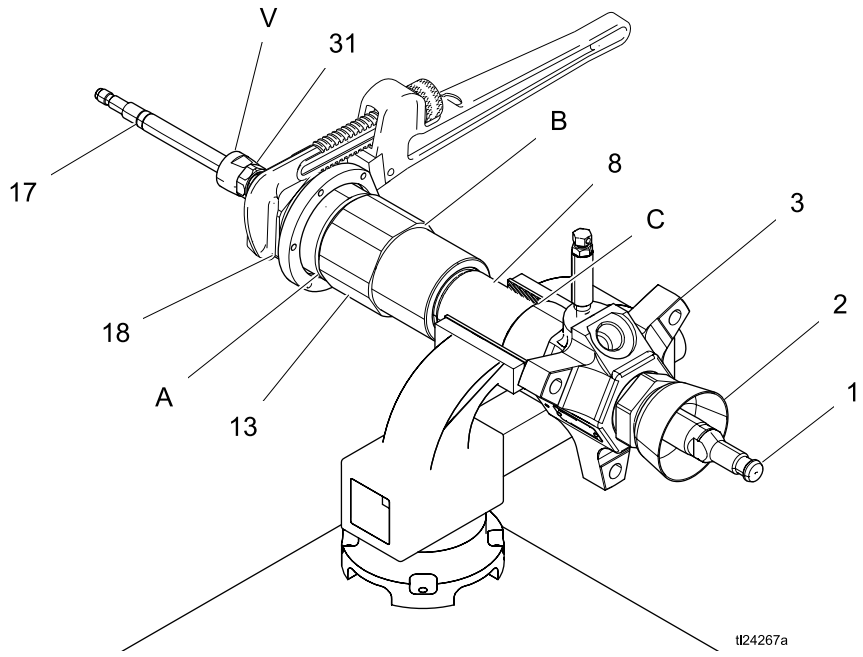


Figure 4 Intake Valve

6. Pull the intake seat (15) and seal (16) out the bottom of the intake housing (13).

   Note

   If the seat (15) is difficult to remove, insert a brass rod through the top of the housing (13) and drive the seat out with a hammer.

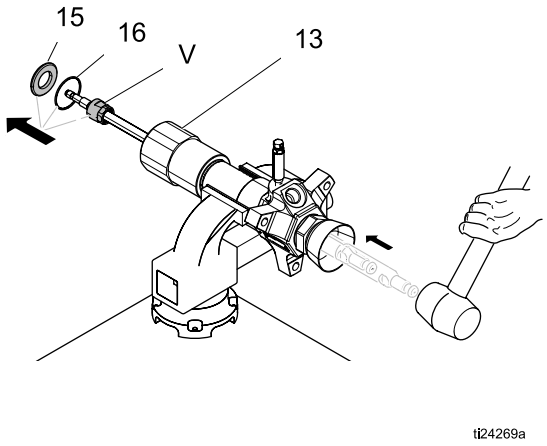


Figure 5

7. Firmly tap the piston rod with a rubber mallet and until the valve assembly comes free. Take care not to drop the valve assembly (V) as it comes free.
8. To repair the piston, cylinder, seals, and rods, see Repair Piston, page 14.
9. Slide the intake housing (13) onto the priming piston rod (17), making certain that the smooth surface of the valve stop (VS) is facing down toward the pump intake. Screw the housing (13) onto the cylinder (8).
10. Lubricate the priming piston rod (17), then slide the preassembled intake valve (V) onto the rod, making certain that the packing nut (31) goes on the rod first. Push the valve assembly up the rod as far as possible. Use a rubber mallet on the priming piston rod (17), to drive the valve assembly up to the stop (VS).
11. The intake seat (15) is reversible. Push it into the housing (13) until it seats securely. Lubricate the seal (16) and install in the bevel around the bottom of the seat.
12. Screw the intake cylinder (8) into the intake housing (13). Using a pipe wrench on the hex of the cylinder (8), torque the cylinder to 385–400 ft-lb (522–542 N•m).
13. Replace priming piston. See Replace Priming Piston, page 11.
14. Reconnect the displacement pump to the air motor as explained in your separate system manual.

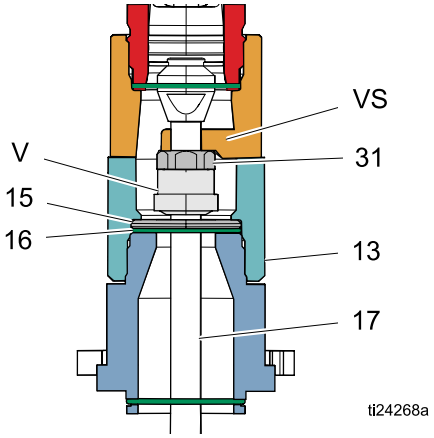
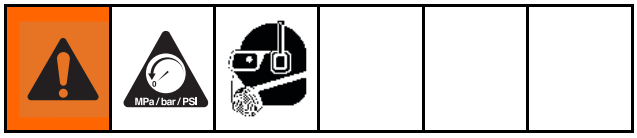


Figure 6

Repair Piston



Note

The piston valve is available as a preassembled, pre–lubricated kit. The kit includes the piston seat/guide assembly (P, items 6, 9, 10, 11, and 12). Order Part No. 237906.

1. Follow Replace Intake Valve, page 12, to disassemble the pump.
2. Remove outlet housing (3).
3. Using a rubber mallet, drive the displacement rod (1) and the priming piston rod (17) out of the cylinder (8). Inspect the outer surfaces of the rods for damage by running a finger over the surface.

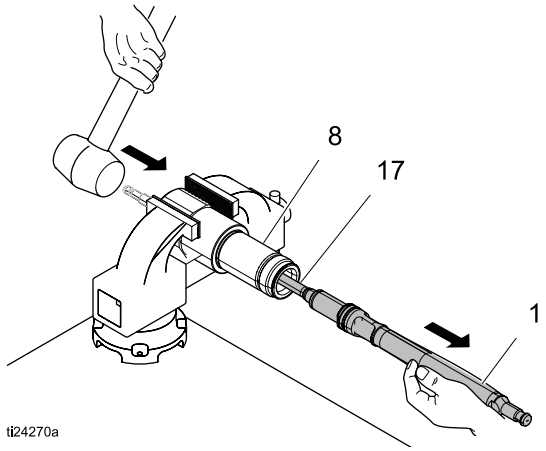


Figure 7

4. Remove the seal (6) from the bottom of the cylinder (8). See Fig. 7. Shine a light into the cylinder to examine the inside surface for scoring or damage. ***Only if the cylinder is damaged, or there is evidence of leaking around the top cylinder seal (6),*** unscrew the cylinder from the outlet housing, using a pipe wrench. Remove the top cylinder seal.

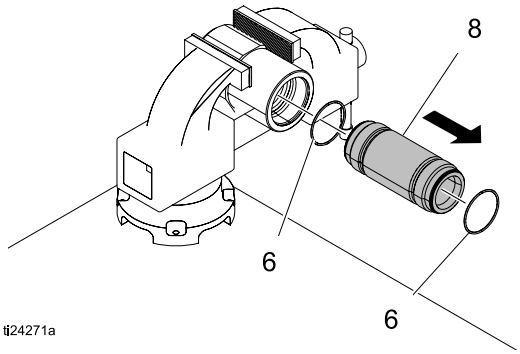


Figure 8

5. Place the flats of the displacement rod (1) in a vise. Unscrew the piston (9) from the displacement rod; the priming piston rod (17) will come with it. Slide the piston seat/guide assembly (10, 11, and 12) off the piston (9).

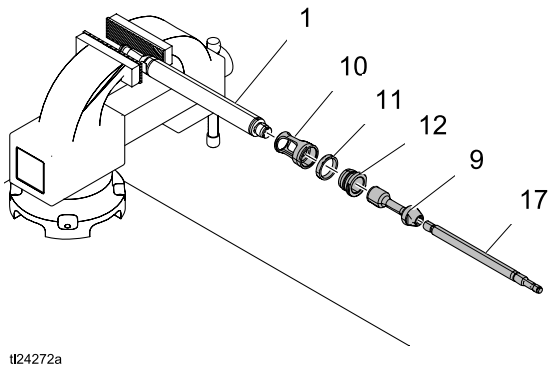


Figure 9

6. Place the piston (9) flats in a vise and unscrew the rod (17).
7. Place the preassembled piston seat/guide assembly (P, items 10, 11, and 12) onto the piston (9) so the 45 beveled seating surfaces match.
8. Place the flats of the displacement rod (1) in a vise. Screw the piston (9) onto the displacement rod (1) hand tight, then torque to 250–265 ft-lb (339–359 N•m).

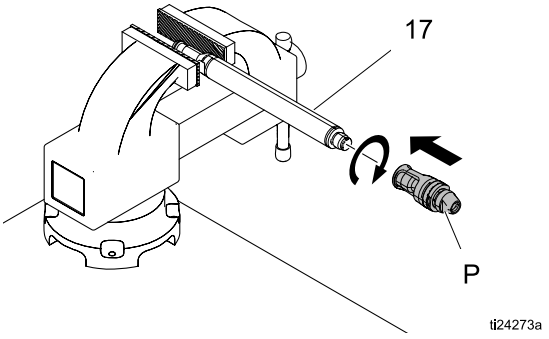


Figure 10

9. Using an adjustable wrench on the flats of the priming piston rod (17), screw the rod into the piston (9). Torque to 92–101 ft-lb (125–137 N•m). Be careful not to create burrs on the flats of the rod.

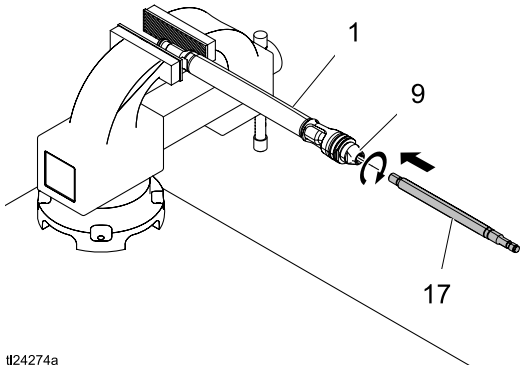


Figure 11

10. If the cylinder (8) was removed from the valve housing (13), lubricate the seal (6) and place it on the top of the cylinder. (The cylinder is symmetrical, so either end can be the top.) Screw the cylinder into the valve housing.

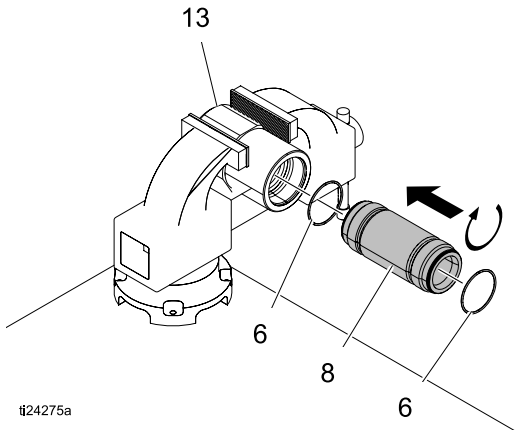


Figure 12

11. Screw the outlet housing (3) onto the cylinder. Torque to 390±45 ft-lbs (528± 61 N•m).
12. Lubricate the displacement rod (1). Slide the rod, piston assembly, and priming piston rod (17) into the cylinder (10) from the bottom, until the top of the rod (1) protrudes from the packing nut (2).

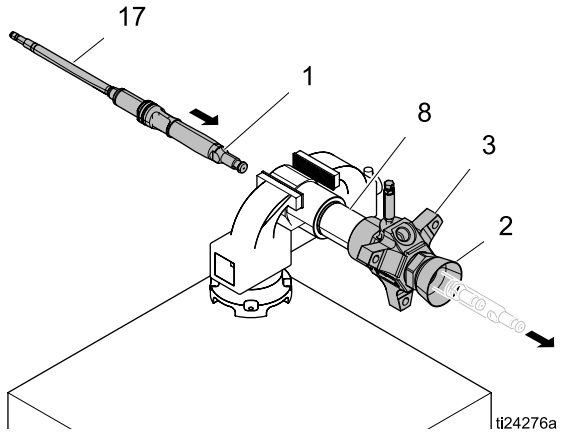
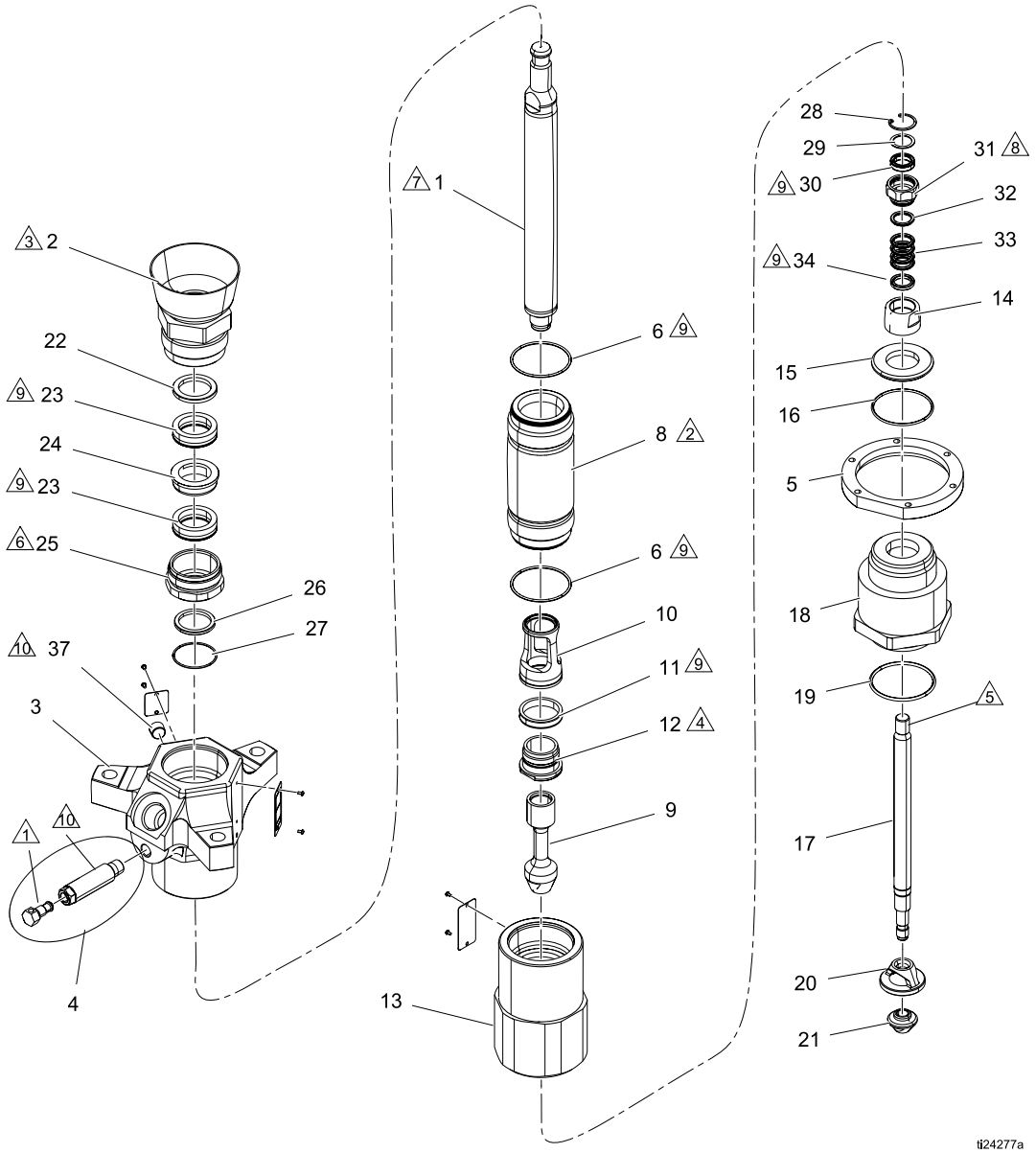


Figure 13

13. Lubricate the seal (6) and install it on the bottom of the cylinder (8).
14. Follow Replace Intake Valve, page 12, to assemble the pump.

Parts

5 Gallon (20 Liter) Pumps
24W152, Pump with Carbon Filled Seals
24W153, Pump with Glass Filled Seals



1 Torque to 25 +/- 2 ft-lbs (25 +/- 2.7 N•m)

2 Torque to 390 +/- 45 ft-lbs (528 +/- 61 N•m)

3 Torque to 150 +/- 30 ft-lbs (203 +/- 40 N•m)

4 Torque to 60 +/- 3 ft-lbs (81 +/- 4 N•m)

5 Torque to 97 +/- 5 ft.-lbs (131 +/- 7 N•m)

6 Torque to 225 +/- 10 ft-lbs (131 +/- 13 N•m)

7 Torque to 255 +/- 16 ft-lbs (345 +/- 21 N•m)

8 Torque to 75 +/- 4 ft-lbs (101 +/- 5 N•m)

9 Apply lubricant.

10 Apply sealant to threads.

24W152, Pump with Carbon Filled Seals
24W153, Pump with Glass Filled Seals

Ref.	Part	Description	Qty
1	16Y958	ROD, displacement, chromex, 11cm	1
2	237799	NUT, packing	1
3	190598	HOUSING, outlet	1
4	237908	BLEEDER VALVE KIT	1
5	190620	FLANGE	1
6*	113040	PACKING, o-ring	2
7*	15M521	BEARING, piston guide	1
8	189437	CYLINDER, pump	1
9*	189439	SEAT, piston, sst	1
10*	15M520	GUIDE, piston, 200	1
11*	113355	BEARING, piston	1
12*	189441	SEAT, piston	1
13	190597	HOUSING, valve	1
14	189514	VALVE, intake	1
15	189446	SEAT, valve	1
16	113041	PACKING, o-ring	1
17	184400	ROD, piston	1
18	190608	CYLINDER, intake	1
19	113054	PACKING, o-ring	1
20●	190606	PISTON, pump	1
21●	190607	SEAT, piston	1
22★	195233	WASHER, seal back-up	1
23★	120286	PACKING, u-cup (assembly 24W152 only)	2
	113021	PACKING, u-cup (assembly 24W153 only)	2
24★	195234	WASHER, scraper 1.476 x 2.157	1
25★	190585	NUT, packing	1
26★	195232	WASHER, rod scraper	1
27★	104537	PACKING, o-ring, ptfe	1
28◆	113015	RING, retainer	1
29◆	190523	WASHER, retainer	1
30◆	120285	PACKING, u-cup (assembly 24W152 only)	1
	113020	PACKING, u-cup (assembly 24W153 only)	1
31◆	190762	NUT, seal	1
32◆	184246	GLAND, packing male	1
33◆	109301	PACKING, vee	4
34◆	184196	GLAND, packing female	1
35	100508	SCREW, drive	6
36	189848	PLATE, designation	1
37	101754	PLUG, pipe	1
38▲	184090	LABEL, warning	1
39▲	172479	TAG, warning	1

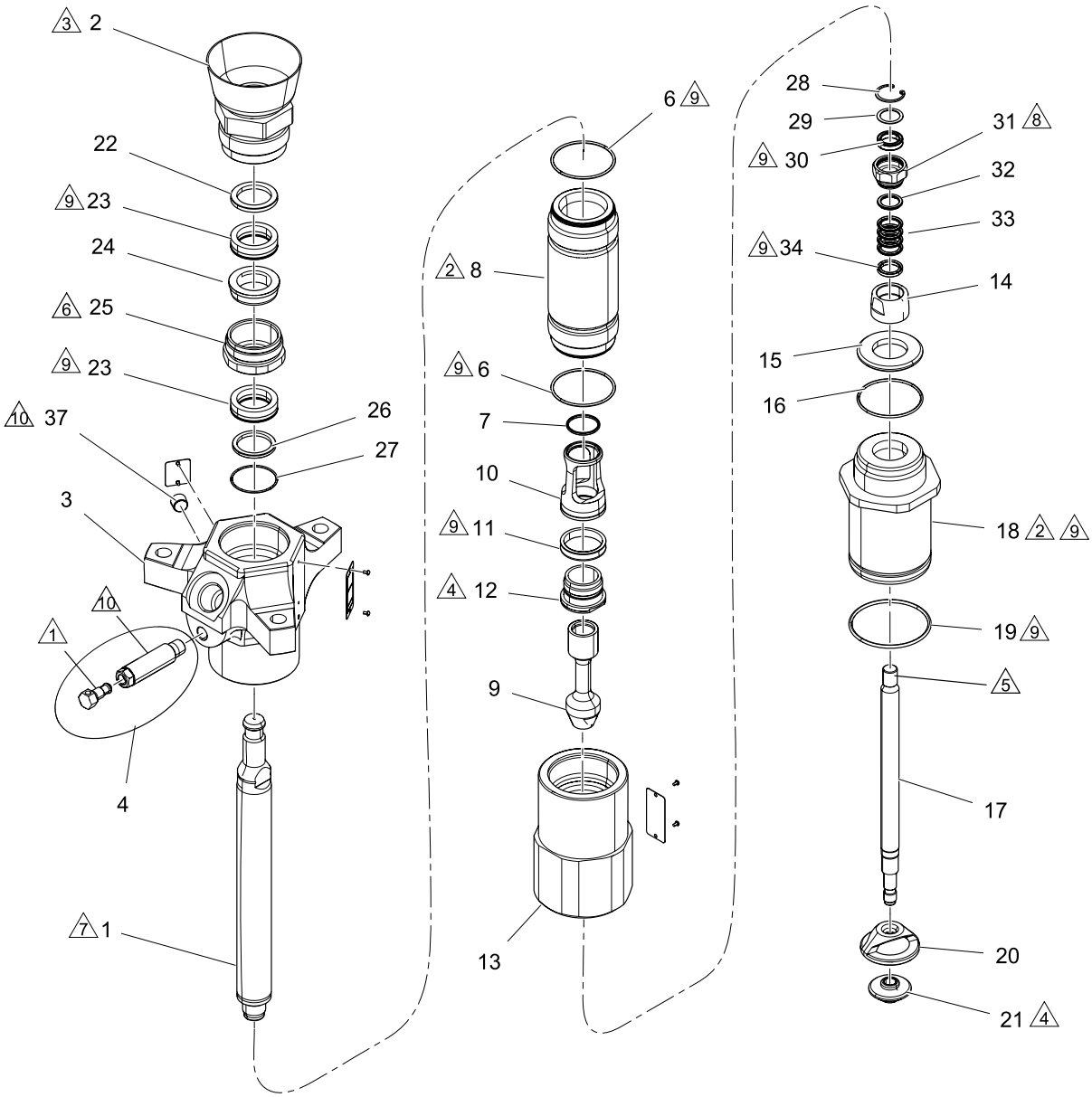
▲ *Replacement Warning labels, signs, tags, and cards are available at no cost.*

Repair Kits	24W152	24W153
Throat ★	24V572	24V573
Piston *	237906	

Repair Kits	24W152	24W153
Intake Valve ◆	253546	237907
Priming Piston ●	237910	

55 Gallon (200 Liter) Pumps

24W150, Pump with Carbon Filled Seals
24W151, Pump with Glass Filled Seals



1 Torque to 25 +/- 2 ft-lbs (25 +/- 2.7 N•m)

2 Torque to 390 +/- 45 ft-lbs (528 +/- 61 N•m)

3 Torque to 150 +/- 30 ft-lbs (203 +/- 40 N•m)

4 Torque to 60 +/- 3 ft-lbs (81 +/- 4 N•m)

5 Torque to 97 +/- 5 ft.-lbs (131 +/- 7 N•m)

6 Torque to 225 +/- 10 ft-lbs (131 +/- 13 N•m)

7 Torque to 255 +/- 16 ft-lbs (345 +/- 21 N•m)

8 Torque to 75 +/- 4 ft-lbs (101 +/- 5 N•m)

9 Apply lubricant.

10 Apply sealant to threads.

24W150, Pump with Carbon Filled Seals
24W151, Pump with Glass Filled Seals

Ref	Part	Description	Qty
1	16Y958	ROD, displacement, chromex,11cm	1
2	237799	NUT, packing	1
3	190598	HOUSING, outlet	1
4	237908	BLEEDER VALVE KIT	1
6*	113040	PACKING, o-ring	2
7*	15M521	BEARING, piston guide cm200	1
8	189437	CYLINDER, pump	1
9*	189439	SEAT, piston, sst	1
10*	15M520	GUIDE, piston, 200	1
11*	113355	BEARING, piston	1
12*	189441	SEAT, piston	1
13	190597	HOUSING, valve	1
14	189514	VALVE, intake	1
15	189446	SEAT, valve	1
16	113041	PACKING, o-ring	1
17	184400	ROD, piston	1
18	190586	CYLINDER, intake	1
19	109482	PACKING, o-ring	1
20●	276378	PISTON,	1
21●	190241	SEAT, piston	1
22	195233	WASHER, seal back-up	1
23★	113021	PACKING, u-cup (24W151 only)	2
	120286	PACKING, u-cup (24W150 only)	2
24★	195234	WASHER, scraper 1.476 x 2.157	1
25★	190585	NUT, packing	1
26★	195232	WASHER, rod scraper	1
27★	104537	PACKING, o-ring, ptfe	1
28◆	113015	RING, retainer	1
29◆	190523	WASHER, retainer	1
30◆	113020	PACKING, u-cup	1
31◆	190762	NUT, seal	1
32◆	184246	GLAND, packing male	1
33◆	109301	PACKING, vee	4
34◆	184196	GLAND, packing female	1
35	100508	SCREW, drive	6
36	189848	PLATE, designation	1
37	101754	PLUG, pipe	1
38▲	184090	LABEL, warning, moving parts	2
39▲	172479	TAG, warning	2

▲ *Replacement Warning labels, signs, tags, and cards are available at no cost.*

Repair Kits	24W150	24W151
Throat ★	24V572	24V573
Piston *	237906	

Repair Kits	24W150	24W151
Intake Valve ◆	237907	253546
Priming Piston ●	237909	

Technical Specifications

Check-Mate 800 Displacement Pump		
	US	Metric
Maximum fluid working pressure	5850 psi	40 MPa, 403 bar
Displacement pump effective area	1.24 $in.^2$	8 cm^2
Maximum pump operating temperature	400°F	200°C
Fluid outlet size	1 in. npt(f)	
Wetted parts	Carbon steel, chrome, zinc, nickel plating, alloy steel, ductile iron, fluoroelastomer, PTFE, bronze, stainless steel (304, 316, 440, and 17–4 PH)	
Weight		
24W152	59 lb	27 kg
24W153	59 lb	27 kg
24W150	59 lb	27 kg
24V020	59 lb	27 kg
Length		
On Upstroke	31.15 in	791.2 mm
On Downstroke (priming piston exposed)	33.75 in	857.2 mm

Notes

Graco Standard Warranty

Graco warrants all equipment referenced in this document which is manufactured by Graco and bearing its name to be free from defects in material and workmanship on the date of sale to the original purchaser for use. With the exception of any special, extended, or limited warranty published by Graco, Graco will, for a period of twelve months from the date of sale, repair or replace any part of the equipment determined by Graco to be defective. This warranty applies only when the equipment is installed, operated and maintained in accordance with Graco's written recommendations.

This warranty does not cover, and Graco shall not be liable for general wear and tear, or any malfunction, damage or wear caused by faulty installation, misapplication, abrasion, corrosion, inadequate or improper maintenance, negligence, accident, tampering, or substitution of non-Graco component parts. Nor shall Graco be liable for malfunction, damage or wear caused by the incompatibility of Graco equipment with structures, accessories, equipment or materials not supplied by Graco, or the improper design, manufacture, installation, operation or maintenance of structures, accessories, equipment or materials not supplied by Graco.

This warranty is conditioned upon the prepaid return of the equipment claimed to be defective to an authorized Graco distributor for verification of the claimed defect. If the claimed defect is verified, Graco will repair or replace free of charge any defective parts. The equipment will be returned to the original purchaser transportation prepaid. If inspection of the equipment does not disclose any defect in material or workmanship, repairs will be made at a reasonable charge, which charges may include the costs of parts, labor, and transportation.

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Graco's sole obligation and buyer's sole remedy for any breach of warranty shall be as set forth above. The buyer agrees that no other remedy (including, but not limited to, incidental or consequential damages for lost profits, lost sales, injury to person or property, or any other incidental or consequential loss) shall be available. Any action for breach of warranty must be brought within two (2) years of the date of sale.

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Phone: 612-623-6921 **or Toll Free:** 1-800-328-0211 **Fax:** 612-378-3505

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Original Instructions. This manual contains English. MM 334127

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